**Department of Electrical and Computer Engineering, NSU**

**CSE 115L: Fundamentals of Computer Programming (Section 4)**

**Lab 16 (Structure), Faculty: Rsl**

**Structure:** Structure is the collection of variables of different types under a single name for better handling

Keyword**struct** is used for creating a structure.

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| **Syntax of Structure** | **Structure declaration code** |
| **struct** structure\_name  {  data\_type member1;  data\_type member2;  .  .  data\_type memeber;  } | **struct** person  {  char name[50];  int id;  float salary;  };  When a structure is defined, it creates a user-defined type but, no storage is allocated |

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| **Ex-1** | **Ex-2 (typedef )** |
| #include<stdio.h>  #include<string.h>  struct person  {  char name[50];  int id;  float salary;  };  int main()  {  struct person p;  strcpy(p.name,"Harry");  // gets(p.name);  p.id=12345;  p.salary=250.0;  printf("Person name: %s \n",p.name);  printf("Person Id: %d \n",p.id);  printf("Person salary: %.2f \n",p.salary);  return 0;  } | #include<stdio.h>  typedef struct participant  {  char name[30];  char country[20];  float score;  int age;  }p;  int main()  {  p player1={"David","Spain",9.65,25};  printf("Name: %s \n",player1.name);  printf("Country: %s \n",player1.country);  printf("Score: %.2f \n",player1.score);  printf("Age: %d \n",player1.age);  p player2;  printf("Enter player2 name:");  gets(player2.name);  printf("Enter player2 country:");  gets(player2.country);  printf("Enter player2 score:");  scanf("%f",&player2.score);  printf("Enter player2 age:");  scanf("%d",&player2.age);  printf("Player 2 name:%s \n", player2.name);  printf("Player 2 country:%s \n", player2.country);  printf("Player 2 name:%.2f \n", player2.score);  printf("Player 2 name:%d \n", player2.age);  } |

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| **Ex-3 ( array of structure)** | **Ex-4 (passing structure into functions)** |
| #include<stdio.h>  typedef struct person  {  char name[50];  int id;  }student;  int main()  {  int i;  student stu[2];  for(i=0; i<2; i++)  {  printf("Enter student %d name and id: \n",i+1);  gets(stu[i].name);  scanf("%d",&stu[i].id);  fflush(stdin);  }  for(i=0; i<2; i++)  {  printf("Print student %d name and id: \n",i+1);  printf("Name: %s\n", stu[i].name);  printf("ID: %d\n", stu[i].id);  }  return 0;  } | #include<stdio.h>  struct person  {  char name[50];  int id;  };  void print(struct person s[],int size);  int main()  {  int i;  struct person stu[2];  for(i=0; i<2; i++)  {  printf("Enter student %d name and id: \n",i+1);  gets(stu[i].name);  scanf("%d",&stu[i].id);  fflush(stdin);  }  print(stu,2);  return 0;  }  void print(struct person s[], int size)  {  int i;  for(i=0; i<2; i++)  {  printf("Print student %d name and id: \n",i+1);  printf("Name: %s\n", s[i].name);  printf("ID: %d\n", s[i].id);  }  } |

**LAB TASK(10 marks)**

1. Write a function int power(int base, int pow) which will take two inputs as parameters and will return the result using recursive method.

